

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 227/04352	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/IL2005/000046	International filing date (day/month/year) 13/01/2005	(Earliest) Priority Date (day/month/year) 15/01/2004
Applicant GLUCON INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1A

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
D1 X	WO 02/15776 A (GLUCON INC; NAGAR, RON; PESACH, BENNY; BEN-AMI, UDI) 28 February 2002 (2002-02-28) cited in the application abstract	1-8, 11-16, 23-30, 33, 36
Y	page 2, line 23 - page 3, line 13 page 14, line 22 - page 18, line 20	17-22, 31, 32, 34, 35, 37
D2 Y	EP 0 282 234 A (DOWLING, ELIZABETH MAY) 14 September 1988 (1988-09-14) abstract	17-22, 34, 35
D3 Y	US 2002/049374 A1 (ABREU MARCIO MARC) 25 April 2002 (2002-04-25) paragraph '0279! - paragraph '0280!	31, 32

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

14 April 2005

Date of mailing of the international search report

29/04/2005

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/IL2005/000046

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
D4 Y	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) & JP 09 192218 A (HITACHI LTD), 29 July 1997 (1997-07-29) abstract	37
A	EP 0 919 180 A (TRW INC) 2 June 1999 (1999-06-02) abstract; figure 6 column 10, line 47 - line 50	9, 10
D5 P,X	WO 2004/107971 A (GLUCON INC; PESACH, BENNY; NAGAR, RON; ASHKENAZI, SHAI; PESACH, GIDON;) 16 December 2004 (2004-12-16) abstract page 8, line 2 - page 21, line 2	1-5, 15-18, 27-30, 33-36
D6 P,X	WO 2004/042382 A (ABBOTT LABORATORIES; KABUSHIKI KAISHA TOSHIBA; KANAYAMA, SHOICHI; ITSU) 21 May 2004 (2004-05-21) abstract page 9 - page 25	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL2005/000046

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0215776	A	28-02-2002	AU 8006601 A EP 1313396 A1 WO 0215776 A1 JP 2004506467 T US 2003167002 A1	04-03-2002 28-05-2003 28-02-2002 04-03-2004 04-09-2003
EP 0282234	A	14-09-1988	CN 1032587 A DK 111088 A EP 0282234 A1 FI 880969 A NO 880891 A PL 270977 A1 BR 8800929 A JP 63247652 A PT 86886 A	26-04-1989 18-10-1988 14-09-1988 04-09-1988 05-09-1988 08-12-1988 11-10-1988 14-10-1988 30-03-1989
US 2002049374	A1	25-04-2002	US 6213943 B1 US 6123668 A US 6120460 A US 5830139 A US 2003069489 A1 AU 761842 B2 AU 1904900 A CA 2348266 A1 CN 1328432 A EP 1126781 A1 IL 128825 A JP 2002528212 T WO 0025662 A1 US 2003139687 A1 US 2004039298 A1 US 6312393 B1 US 2002049389 A1 AU 741461 B2 AU 4177897 A BR 9711993 A CA 2264193 A1 CN 1229345 A EP 0926979 A1 JP 2000517231 T WO 9809564 A1	10-04-2001 26-09-2000 19-09-2000 03-11-1998 10-04-2003 12-06-2003 22-05-2000 11-05-2000 26-12-2001 29-08-2001 25-07-2004 03-09-2002 11-05-2000 24-07-2003 26-02-2004 06-11-2001 25-04-2002 29-11-2001 26-03-1998 18-01-2000 12-03-1998 22-09-1999 07-07-1999 26-12-2000 12-03-1998
JP 09192218	A	29-07-1997	NONE	
EP 0919180	A	02-06-1999	US 5941821 A EP 0919180 A1 JP 3210632 B2 JP 11235331 A TW 408219 B US 6049728 A	24-08-1999 02-06-1999 17-09-2001 31-08-1999 11-10-2000 11-04-2000
WO 2004107971	A	16-12-2004	WO 2004107971 A2	16-12-2004
WO 2004042382	A	21-05-2004	JP 2004147940 A CN 1493252 A WO 2004042382 A1	27-05-2004 05-05-2004 21-05-2004

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IL2005/000046

International filing date (day/month/year)
13.01.2005

Priority date (day/month/year)
15.01.2004

International Patent Classification (IPC) or both national classification and IPC
A61B5/00

Applicant
GLUCON INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000046

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been **established** on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been **established** on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000046

Box No. V Reasoned statement under Rule 43b/is.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-3,15,16,23,27-30,33,36
Inventive step (IS)	Yes: Claims	9,10
	No: Claims	4-8,11-14,17-22,24-26,31,32,34,35,37
Industrial applicability (IA)	Yes: Claims	1-37
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

1. Reference is made to the following document:
D1: WO 02/15776 A
D2: EP-A-0 282 234
D3: US 2002/049374 A1
D4: PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) & JP 09 192218 A (HITACHI LTD), 29 July 1997 (1997-07-29)
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document): apparatus for assaying an analyte in blood in a patient's blood vessel (abstract) comprising:

- a light provider comprising at least one light source that illuminates a tissue region in which a blood vessel is located with light that stimulates photoacoustic waves in the region (p.2, l.32 - p.3, l.13);
- at least one acoustic transducer that generates signals responsive to the photoacoustic waves (p.17, l.31 - p.18, l.7);
- a controller that receives the signals and processes them to determine which are responsive to photoacoustic waves that originate in the blood vessel and uses the determined signals to assay the analyte (p.18, l.7-20);

wherein, the light provider and at least one transducer define a field of view that overlaps the blood vessel, the field of view having a central region and a lateral extent greater than about 4 mm (p.17, l.6-12; fig.1 - it is indicated that the terms "field of view", "central region" and "lateral extent" are not clear; however, one can see that the dimensions of the extent of at least one light pulse transmitted by the light provider of D1 depends on the depth of penetration and at a certain depth has the size specified in claim 1).

3. The subject matter of dependent claim 9 differs from the disclosure of D1 in that the light provider comprises a mirror, which is rotatable about an axis and for different

rotation angles of the mirror about the axis the fan beam illuminates a different portion of the tissue region. The problem to be solved may be regarded as providing an glucometer adapted to illuminate a larger area of tissue. None of available documents discloses or suggests the use of a rotatable mirror in order to solved the problem posed. Claims 9 and 10 are thus considered to meet the requirements of Article 33(1) PCT.

3. Dependent claims 2-8 and 11-37 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty or inventive step, since they are either thought by documents D1-D4 or merely directed towards straightforward possibilities or slight constructional changes, which come within the scope of a person skilled in the art. Exemplary references are made for claims 5 (see D1: p.17, l.28-30), 15 (see D1: p.15, l.8-9), 16 (see D1: p.15, l.13-15), 17 (see D2: col.9, l.18-21), 27 (see D1: p.2, l.27-31), 31 (see D3: §[0279]-§[0280]), 33 (see D1: fig.6B), 37 (see D4: abstract).